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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,013	07/15/2003	Phillip J. Hawkins	NSD 2002-003	8606

7590 04/13/2007
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EXAMINER

GREENHUT, CHARLES N

ART UNIT	PAPER NUMBER
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3652

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/620,013	HAWKINS ET AL.	
	Examiner	Art Unit	
	Charles N. Greenhut	3652	/

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-9 is/are allowed.
- 6) ☒ Claim(s) 1 and 4-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

I. Request for Continued Examination

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/26/07 has been entered.

II. Claim Rejections - 35 USC § 112

The following is a quotation from the relevant paragraphs of 35 U.S.C. 112:

(2) The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 1 and 4-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
 - 1.1. With respect to claim(s) 1, the limitation "said rotation" in line 12 has been rendered unclear by the present amendment because more than one rotation has been discussed previously (block and base). It is therefore unclear which rotation, "said rotation" refers to.
 - 1.2. With respect to claim(s) 4, the limitations, "toward the tube sheet" and "bias...against the tube sheet" render the scope of the claim unclear since the tube sheet was never positively recited as a required element of the combination, merely as the object of functional recitations, i.e., for servicing tubes extending through a tube sheet. Claim limitations requiring the claimed manipulator to be connected to, or to interact in a certain way, with the tube sheet make it impossible to determine if Applicant is attempting to claim the combination of the tube sheet with the manipulator or the subcombination of the manipulator intended for use with the tube sheet as the parent claim, 1, would suggest.
 - 1.3. With respect to claim(s) 10, "the more than one manipulator" in line 5 lacks antecedent basis. More than one manipulator is never recited, merely one manipulator "sized to permit more than one..."

III. Claim Rejections - 35 USC § 102

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States..

1. Claim 1 is rejected under 35 U.S.C. 102(b) as anticipated by STEWART (US 4,662,465 A) or, in the alternative, under 35 U.S.C. 103(a) as obvious over ADAMOWSKI in view of STEWART as discussed below.

1.1. With respect to claim(s) 1, STEWART (Fig. 9) discloses a base member (2), having a holder (Col. 2 Li. 24-26), and a gripper (9), a block member (20/4) directly rotably connected to the base member (2) so that the base member (2) can rotate in a plane relative to the block member when the position of the block member (20/4) is fixed and a position of the base member (2) is not fixed and the block member (20/4) can rotate relative to the base member (2) when a position of the base member (2) is fixed and the block member (20/4) is not fixed (Col. 5 Li. 55), a portion (4) of the block member (20/4) movable in a linear direction (up and down in Fig. 9) in a direction perpendicular to the plane the base member (2) rotates in (normal to page – Fig. 9), a foot member (3) connected to the block member (20/4), the block member (20/4) moving in the horizontal direction (A) and the vertical direction (Col. 5 Li. 52) between the foot (3) and base (2) members while maintaining the foot (3) and base (2) members in parallel planes.

IV. Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim(s) 1, 4-6, 10-12, and 14 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ADAMOWSKI (US 4,298,054 A) in view of STEWART (US 4,662,465 A).

1.1. With respect to claim(s) 1, ADAMOWSKI discloses a base member (14) having an inspection device (15), at least one gripper (11b), a block member (10), movable in a two perpendicular linear directions in horizontal and vertical directions (f1 and vertical), a foot member (at 12a) having a gripper (11a) for drawing the manipulator toward the tube sheet. ADAMOWSKI fails to teach the block member rotably connected to the base member so that the base member. The orientation of the main components, the base, block and foot member, is known in the art. For example, STEWART (Fig. 9) teaches a block member (20/4) rotatable with respect to the base member (2) so that the base member (2) can rotate in a plane relative to the block member when the position of the block member (20/4) is fixed and a position of the base member (2) is not fixed and the block member (20/4) can rotate relative to the base member (2) when a position of the base member (2) is fixed and the block member (20/4) is not fixed (Col. 5 Li. 55), a portion (4) of the block member (20/4) movable in a linear direction (up and down in Fig. 9) in a direction perpendicular to the plane (normal to page) the base member (2) rotates in, a foot member (3) connected to the block member (20/4), the block member moving in the horizontal direction (A) and the vertical direction (Col. 5 Li. 52) between the foot (3) and base (2) members while maintaining the foot (3) and base (2) members in parallel planes. It would have been obvious to one having ordinary skill in the art to modify ADAMOWSKI with the main body configuration of STEWART to enable additional locomotion alternatives for each step, thereby reducing the time required to perform service.

1.2. With respect to claim(s) 5-6, 10, 12, and 14 ADAMOWSKI additionally discloses standoffs (13) at least two grippers (11a)/(11b) and sized to permit more than one manipulator to be suspended and hydraulic/pneumatic drives (12a/b).

1.3. Claim(s) 11 involves merely the duplication of parts, it would have been obvious to one having ordinary skill in the art to duplicate the manipulator of claim 1 in order to decrease the time required to perform the inspection and/or servicing.

2. Claim(s) 7 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ADAMOWSKI in view of STEWART and further in view of SHUNICHI (US 4,070,561 A).

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2.1. With respect to claim 7, ADAMOWSKI fails to teach each gripper having a limit switch functioning to verify an acceptable degree of insertion. SHUNICHI teaches each gripper having a limit switch functioning to verify a pre-selected length of insertion (Col. 10 Li. 4 et seq.). It would have been obvious to one of ordinary skill in the art to modify ADAMOWSKI in view of STEWART with the limit switches of SHUNICHI in order to provide feedback regarding the location of the grippers.

3. Claim(s) 12-13 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ADAMOWSKI in view of STEWART and further in view of WARD (US 3,913,452).

3.1. With respect to claim 12, ADAMOWSKI fails to teach the manipulator is approximately 30 pounds or less. WARD teaches a manipulator that is approximately 30 pounds or less (Col. 9). It would have been obvious to one of ordinary skill in the art to modify ADAMOWSKI in view of STEWART with the light weight of WARD in order to minimize the gripping force required to suspend the manipulator.

3.2. With respect to claim 13, ADAMOWSKI is silent regarding the load capacity of the apparatus. WARD teaches two or more fingers, each having a load capacity of fifty pounds (Col. 9 Li. 16) and therefore teaches supporting a payload as much as seventy pounds. It would have been obvious to one of ordinary skill in the art to modify ADAMOWSKI in view of STEWART with the load capacity of WARD in order to support equipment.

V. Allowable Subject Matter

1. Claim(s) 8-9 are allowed for reasons previously indicated.

VI. Response to Applicant's Arguments

Applicant's arguments entered 2/26/07 have been fully considered.

1. Applicant argues that claim 1, as amended, is not rendered obvious by ADAMOWSKI in view of YANAGISAWA. This argument is persuasive. The rejection under 35 USC 102(b) over ADAMOWSKI in view of YANAGISAWA is, therefore, withdrawn. A new grounds of rejection, however, over ADAMOWSKI in view of STEWART is presented above. Applicant's remaining arguments with

respect to ADAMOWSKI in view of YANAGISAWA are rendered moot in light of the new grounds for rejection.

2. Applicant argues that claim 4 is not rendered obvious by ADAMOWSKI because the mandrills do not exert a force to draw the fixture toward the tube sheet. This argument is not persuasive. Firstly, the claim requires a force *in a direction* to draw.... Secondly, the limitation is functional in nature. The step of actually moving the ADAMOWSKI fixture in the direction of the tube sheet, is not required to meet the limitations of the claim, merely the capability of doing so. The friction force generated by the gripper acts upward to counteract the effects of gravity. The gripper is therefore exerting a force in a direction to draw [the base/foot] toward the tube sheet. (e.g., if it were not, the fixture would fall). ADAMOWSKI meets the limitation within its broadest reasonable interpretation. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

3. Applicant argues that the teachings of SHUNICHI do not render claim 7 obvious because SHUNICHI fails to disclose a limit switch detecting the degree of insertion. This argument is not persuasive. Firstly, Applicant is arguing limitations that are not claimed. The claim requires a limit switch that functions to verify a pre-selected length of insertion. A limit switch that detects insertion or non-insertion is capable of verifying a pre-selected length of insertion within the broadest reasonable interpretation of that term. The Examiner acknowledges the distinction between the limit switches as they are used in Applicant's preferred embodiment and that of the prior art, however, although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

4. Applicant argues that claims 10 and 11 are not rendered obvious by ADAMOWSKI because ADAMOWSKI does not show operating at least two manipulators of the same design in the same section of the channel head at the same time. This argument is not persuasive. No such teaching is required to meet the limitations of those claims. The claim merely requires that the manipulator be "sized to permit more than one..." and "operable in parallel." Given their broadest reasonable interpretation, these limitations are met by ADAMOWSKI.

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VII. Conclusion

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles N. Greenhut whose telephone number is (571) 272-1517. The examiner can normally be reached on 7:30am - 4:00pm EST.
2. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Mackey can be reached at (571) 272-6916. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.
3. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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